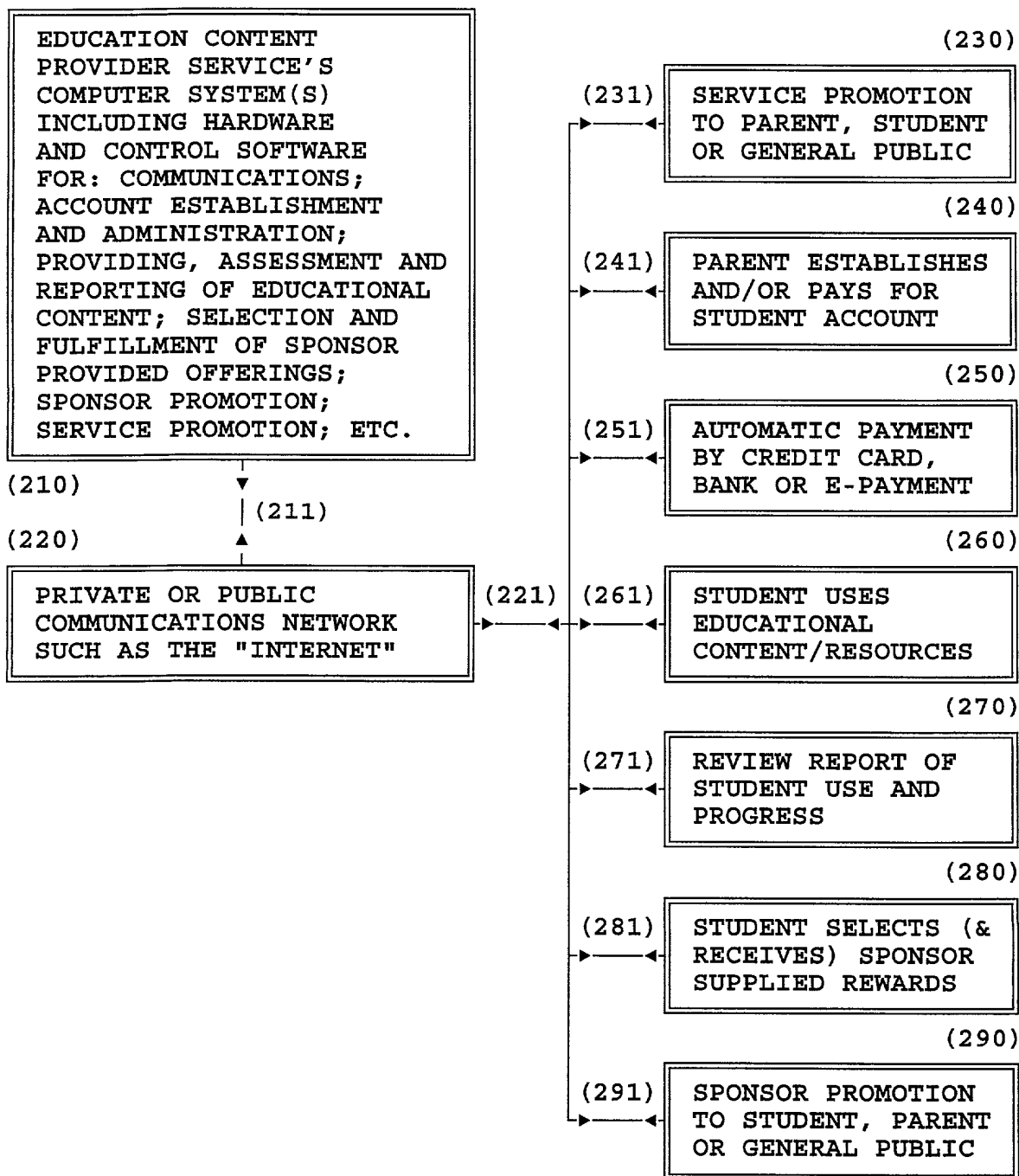
**FIGURE 1: RELATIONSHIPS BETWEEN PARTIES**

**FIGURE 2: EXAMPLES OF NETWORK-MEDIATED FUNCTIONS**

| | | |
|-----|---|--------------------------------------|
| 310 | ACCOUNT INFORMATION: EXAMPLES, SOME DETAILS OMITTED | |
| 311 | PARENT LOGIN | DADDYO6 |
| 312 | PARENT PASSWORD | IPAY4IT |
| 313 | PARENT NAME | DR. SAMUEL CONCERNED |
| 314 | PARENT CONTACT | 123 MAIN; 212/333-4444; drwc@att.com |
| 315 | PARENT PAYMENT | VISA 1234-777888-90112 |
| 316 | STUDENT LOGIN | SONOFSAM |
| 317 | STUDENT PASSWORD | NOTBYCHOICE |
| 318 | STUDENT NAME | SAMUEL CONCERNED, JR. |
| 319 | STUDENT CONTACT | 123 MAIN; 212/333-4445; sos@att.com |
| 320 | SERVICES | STANDARD MATH & INTENSIVE VERBAL |
| 321 | INCENTIVES | ALL OK BUT COSMETICS |

FIGURE 3: EXAMPLE OF ACCOUNT INFORMATION DATABASE ENTRY

| | | |
|-----|--|---------------------------------------|
| 410 | WEEKLY STUDENT USE: EXAMPLES, SOME DETAILS OMITTED | |
| 411 | MONDAY USE | YES; SCORE 80%; POINTS 1 |
| 412 | TUESDAY USE | YES; SCORE 90%; POINTS 1 |
| 413 | WEDNESDAY USE | YES; SCORE 60%; POINTS 1 |
| 414 | THURSDAY USE | NO; SCORE NIL; POINTS 0 |
| 415 | FRIDAY USE | YES; SCORE 70%; POINTS 1 |
| 416 | SATURDAY USE | YES; SCORE 70%; POINTS 2 |
| 417 | SUNDAY USE | YES; SCORE 80%; POINTS 2 |
| 418 | WEEKLY SCORE | 6 VISITS; AVERAGE SCORE 75%; 8 POINTS |
| 419 | REWARD OFFERED | LEVEL 2 MUSIC OR LEVEL ONE CLOTHING |

FIGURE 4: EXAMPLE OF WEEKLY A STUDENT USE DATABASE ENTRY

| | | |
|-----|---|--|
| 510 | STUDENT PROGRESS REPORT: EXAMPLES, SOME DETAILS OMITTED | |
| 511 | MATH WEEK 1 | AVERAGE SCORE 60% |
| 512 | VERBAL WEEK 1 | AVERAGE SCORE 90% |
| | . . . | |
| 513 | MATH WEEK N | AVERAGE SCORE 80% |
| 514 | VERBAL WEEK N | AVERAGE SCORE 90% |
| 515 | MATH PROGRESS | MODERATE SCORE; VERY GOOD PROGRESS |
| 516 | VERBAL PROGRESS | GOOD SCORE; BUT NO PROGRESS |
| 517 | RECOMMENDATION 1 | MATH: ISOSCELES RIGHT TRIANGLE PROBLEM |
| 518 | RECOMMENDATION 2 | VERBAL: PRACTICE SUPPLIED VOCABULARY |
| | . . . | |
| 519 | RECOMMENDATION N | GENERAL: SKIP FEWER PRACTICE SESSIONS |

FIGURE 5: EXAMPLES OF A STUDENT PROGRESS REPORT DATABASE ENTRY

| | | |
|-----|--|-------------------------------|
| 610 | STUDENT/PROBLEM PROGRESS: EXAMPLES, SOME DETAILS OMITTED | |
| 611 | PROBLEM 1 | RIGHT ISOSCELES TRIANGLE |
| 612 | ENCOUNTER 1 | VERSION 6; CORRECT; SESSION 2 |
| 613 | ENCOUNTER 2 | VERSION 3; CORRECT; SESSION 5 |
| 614 | STATUS | MASTERED; REPEAT ONLY IF TIME |
| | . . . | |
| 619 | CONTINUATION | ONLY AS NEEDED |

| | | |
|-----|--|---------------------------------|
| 620 | STUDENT/PROBLEM PROGRESS: EXAMPLES, SOME DETAILS OMITTED | |
| 621 | PROBLEM 2 | 30°/60°/90° TRIANGLE |
| 622 | ENCOUNTER 1 | VERSION 2; INCORRECT; SESSION 2 |
| 623 | ENCOUNTER 2 | VERSION 4; INCORRECT; SESSION 3 |
| 624 | ENCOUNTER 3 | VERSION 6; CORRECT; SESSION 4 |
| 625 | ENCOUNTER 4 | VERSION 1; CORRECT; SESSION 6 |
| 626 | ENCOUNTER 5 | VERSION 3; CORRECT; SESSION 12 |
| 627 | STATUS | MASTERED; BUT REPEAT TO CONFIRM |
| | . . . | |
| 629 | CONTINUATION | ONLY AS NEEDED |

FIGURE 6: EXAMPLES OF STUDENT/PROBLEM PROGRESS REPORT DATABASE ENTRIES

| | | |
|-----|---|--|
| 710 | PROBLEM STRUCTURE: EXAMPLES, SOME DETAILS OMITTED | |
| 711 | NAME | 3/4/5 TRIANGLE |
| 712 | PROBLEM/VERSION | PROBLEM 27 VERSION 2 |
| 713 | TEXT FOR PROBLEM | "Side A of triangle is 10 inches ..." |
| 714 | PROBLEM GRAPHIC | P27V2.GIF |
| 715 | ANSWER A TEXT | "6 inches" |
| 716 | ANSWER B TEXT | "6 feet" |
| 717 | ANSWER C TEXT | "8 inches" |
| 718 | ANSWER D TEXT | "10 inches" |
| 719 | ANSWER E TEXT | "5 inches" |
| 720 | CORRECT ANSWER | A |
| 721 | CORRECT ACTION A | "Congratulations, you recognized ..." |
| 722 | INCOR. ACT. B-D | "Sorry, <u>CLICK HERE</u> to review 3/4/5 ..." |
| 723 | INCOR. ACTION E | "This is not a 30°/60°/90° ..." |
| 724 | ACTION E GRAPHIC | P27ACTE.GIF |
| 725 | REVIEW TEXT | "This is an example of a 3/4/5 ..." |
| 726 | REVIEW GRAPHIC | P27REV.GIF |
| 727 | ADDITIONAL HELP | "For additional help see Schaum's ..." |
| 728 | STATISTICS | Historical use by all students |

FIGURE 7: EXAMPLE OF A PROBLEM STRUCTURE DATABASE ENTRY

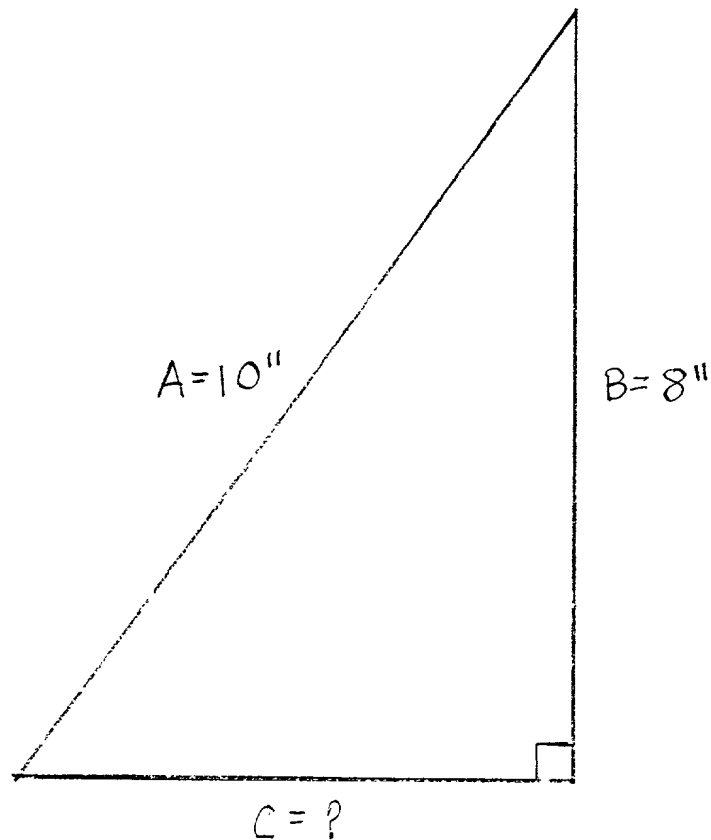
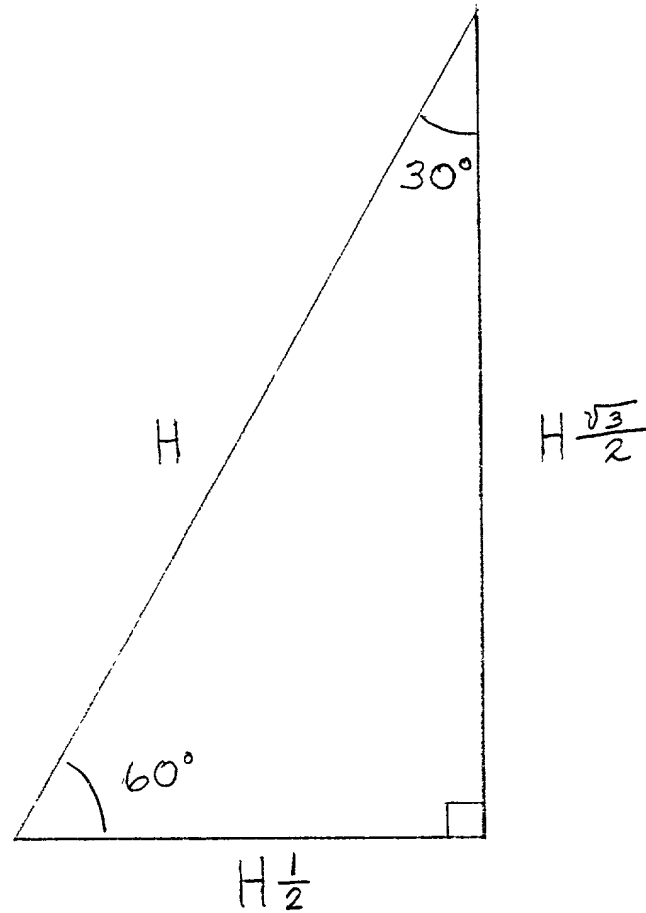


FIGURE 8: EXAMPLE OF A PROBLEM STATEMENT ILLUSTRATION

**FIGURE 9: EXAMPLE OF AN ANSWER CORRECTION ILLUSTRATION**

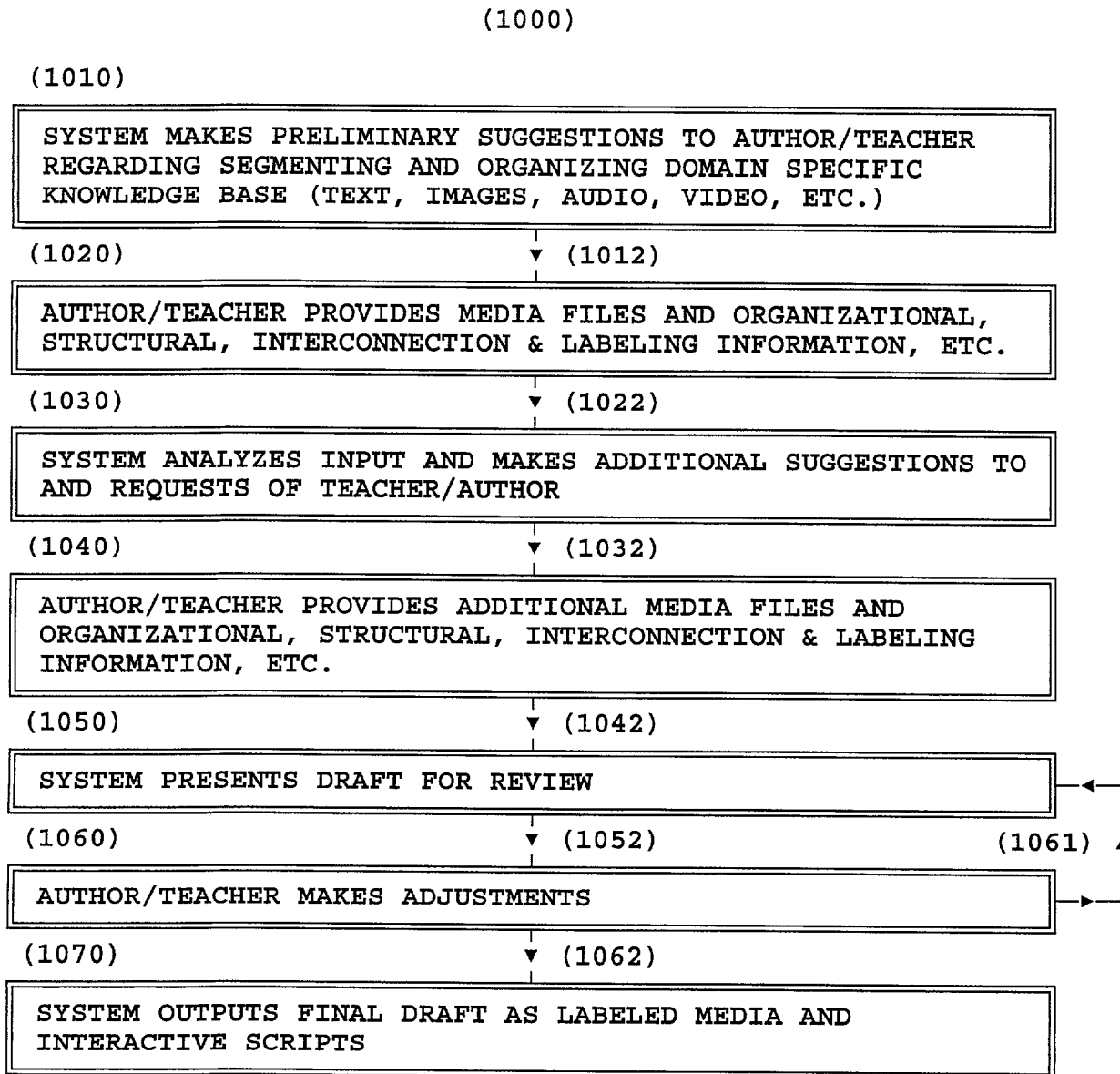


FIGURE 10: OVERALL SYSTEM FLOW — AUTHORING (TEACHING) MODE

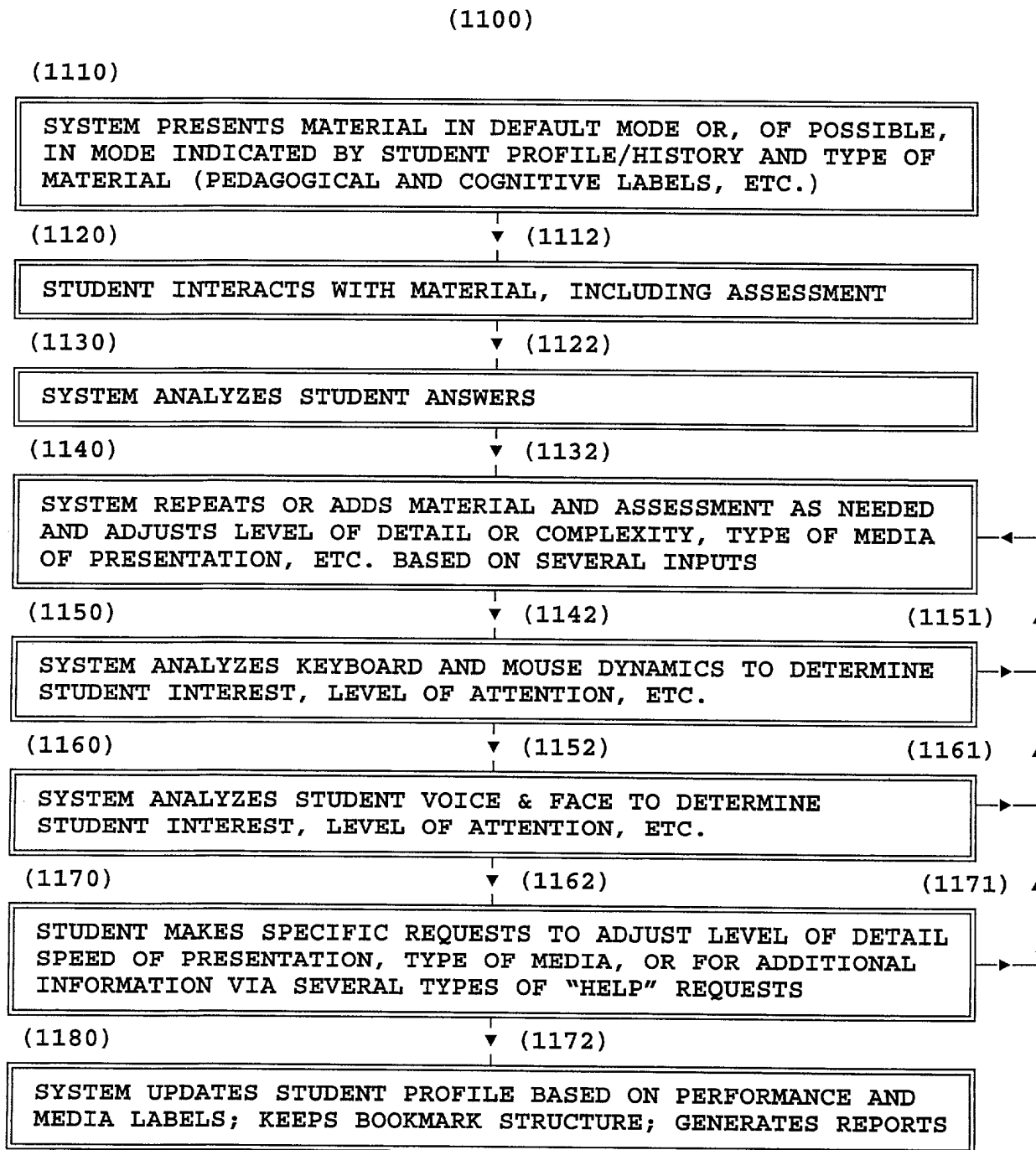


FIGURE 11: OVERALL SYSTEM FLOW — PRESENTATION (LEARNING) MODE

(1200)

(1210)

PRELIMINARY SYSTEM QUERIES
(ELEMENTS OPTIONAL AND UPDATABLE):

Title of [sub]-unit?
What is knowledge [sub-]domain?
What is subject?
Who is (are) audience(s)?
Purpose of material?
Use (applications) of material?
Characterize theoretical vs. practical;
abstract vs. concrete; etc.
Prerequisite courses, units, sub-units skills?
Pointers to related materials?
Add your own tags and visible/hidden/help comments.
Etc.

(1220)

▼ (1212)

ATOMIZING AND ORGANIZING OF MATERIAL
(ELEMENTS OPTIONAL AND UPDATABLE):

List key concepts, points, facts to be presented.
Organize into default, multi-tier, outline.
Specify recommended (required) internal prerequisites.
Specify internal relations.
Add your own tags and visible/hidden/help comments.
Etc.

(1230)

▼ (1222)

ETC.

FIGURE 12: EXAMPLES OF EXPANSION OF ELEMENT (1010)

(1300)

(1310)

IN RESPONSE TO FINISHING A CONCEPTUAL UNIT, SYSTEM ASKS THE FOLLOWING TO CONSTRUCT INTERACTIVE ASSESSMENT SCRIPT:

What question(s) would you ask to confirm mastery of this material?"

AND FOR EACH QUESTION:

What is a correct answer?

What is an expected wrong answer(s)?

If a student chose this wrong answer, what would you tell them, in order to clarify their understanding?

What re-enforcing or remedial material would you recommend presenting?

Etc.

(1320)

▼ (1312)

IN RESPONSE TO FINISHING A CONCEPTUAL [SUB]-UNIT, SYSTEM ASKS THE FOLLOWING TO CONSTRUCT ALTERNATE PRESENTATIONS WITH DISTINCT LEVELS OF DETAIL AND OTHER DIFFERENCES:

State that again, but in different language.

State that again, but in more detail (or more complex).

State that again, but in less detail (or simpler).

State an analogy that illustrates this concept.

Provide graphic/animation that illustrates this concept.

Provide pointer(s) to background material.

Provide an example of how this material/concept is used.

Tell me what this material/concept is good for.

Etc.

(1330)

▼ (1322)

IN RESPONSE TO FINDING A NEW TERM:

That term is unfamiliar – please supply a definition.

(1340)

▼ (1332)

IN RESPONSE TO FINDING A TERM DISCUSSED ELSEWHERE:

Should that other material be marked as prerequisite?

Should that other material be marked as related?

(1350)

▼ (1342)

ETC.

FIGURE 13: EXAMPLES OF EXPANSION OF ELEMENT (1030)

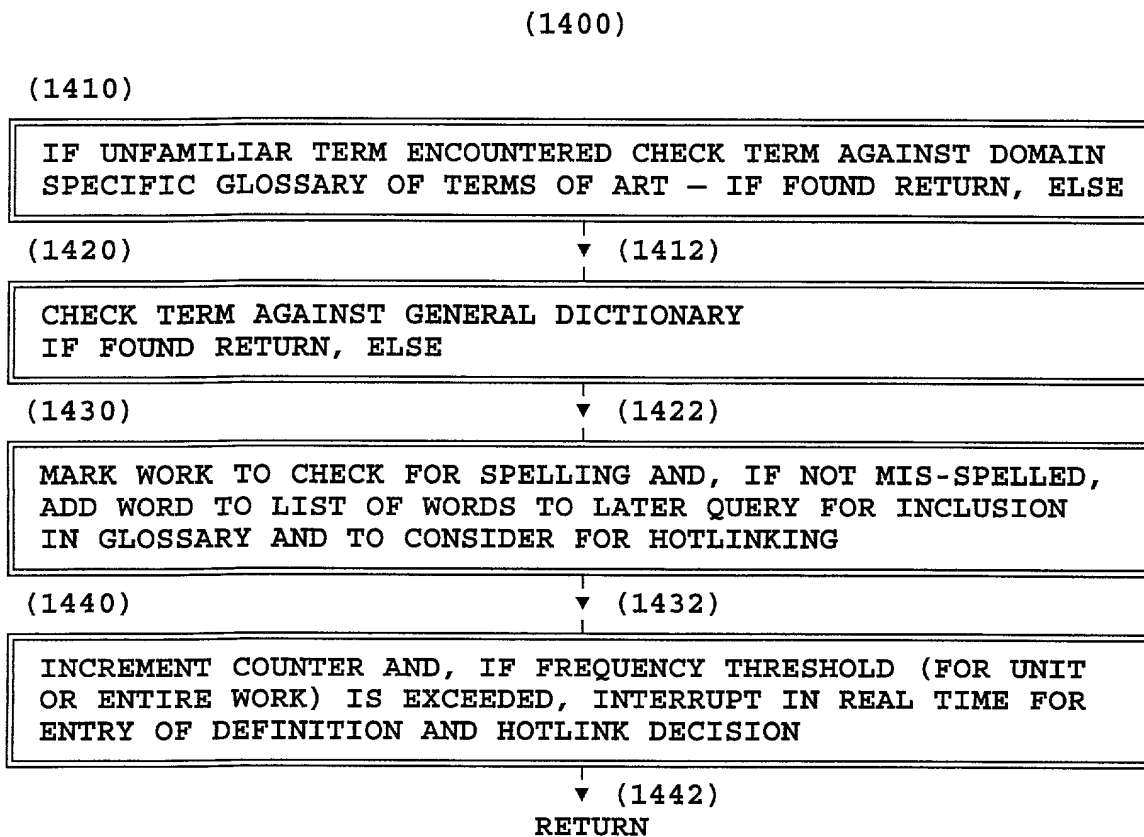


FIGURE 14: EXAMPLE OF EXPANSION OF ELEMENT (1330)

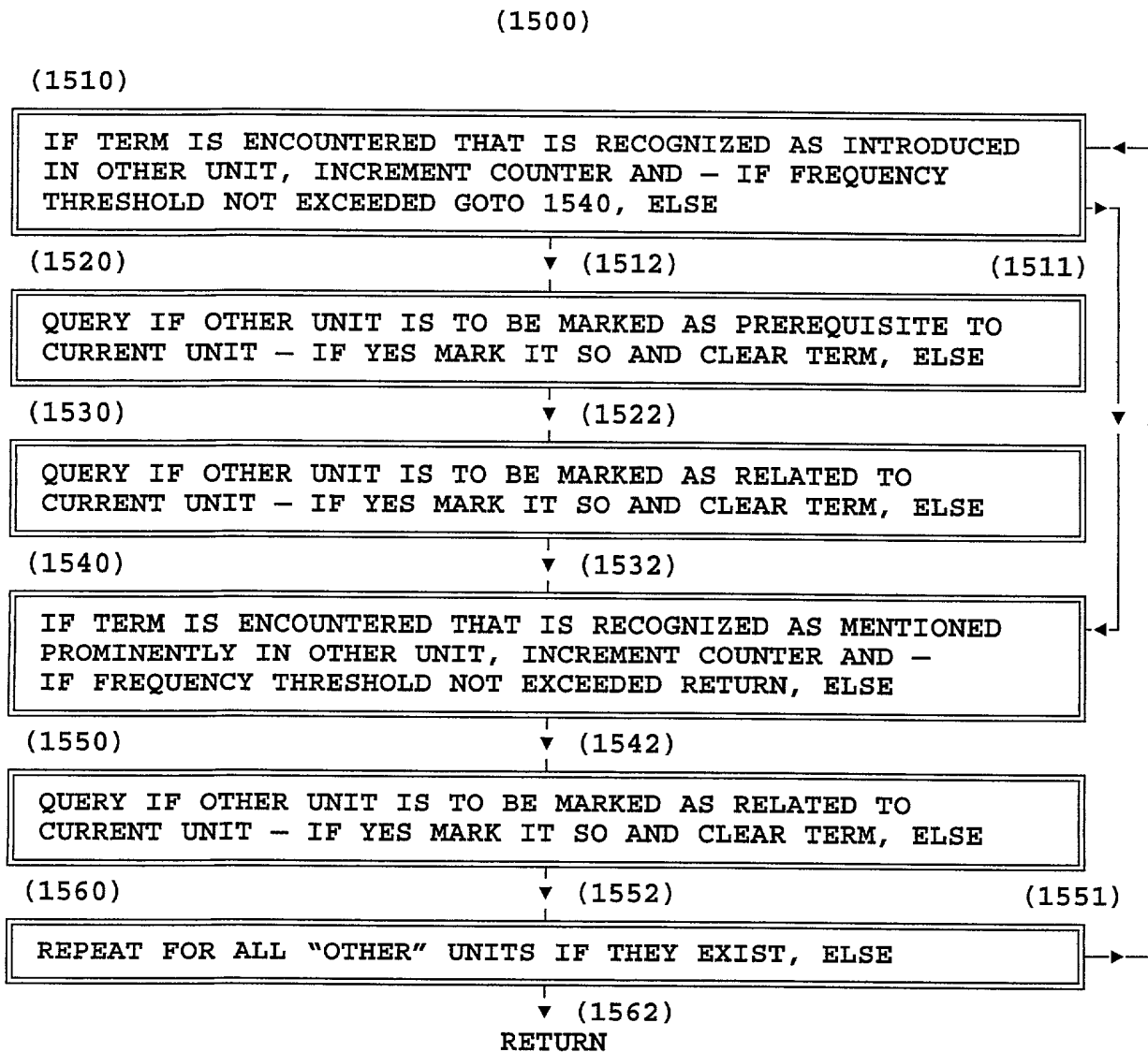


FIGURE 15: EXAMPLE OF EXPANSION OF ELEMENT (1340)

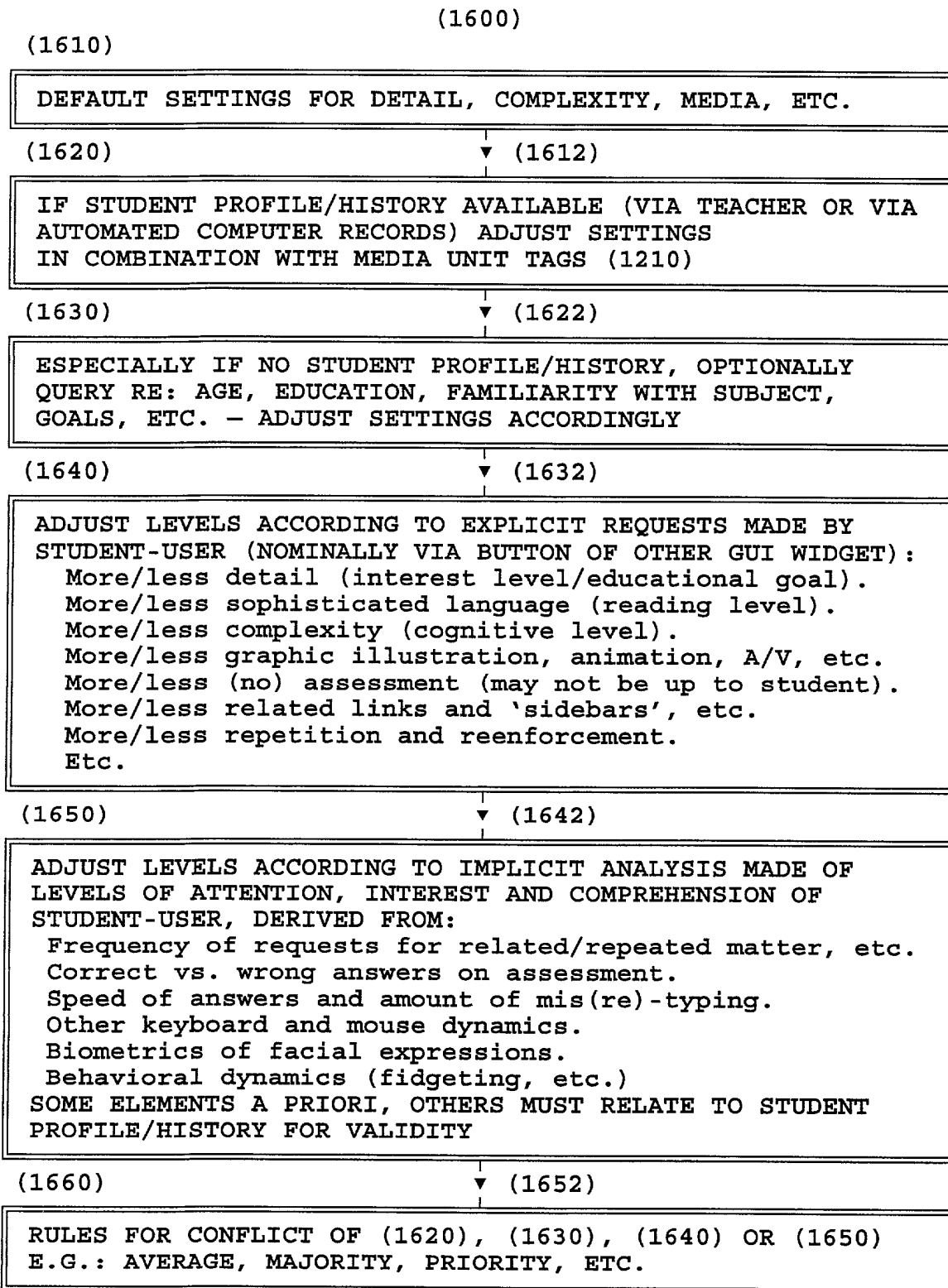


FIGURE 16: EXAMPLE OF EXPANSION OF PART OF ELEMENT (1140)

(1700)

(1710)

IF HELP REQUEST IS GENERAL HELP TYPE, TRANSFER TO MAIN
PROGRAM HELP FUNCTION, ELSE

(1720)

▼ (1712)

IF HELP REQUEST IS "SHOW ME" HELP TYPE, PRESENT GRAPHIC,
ANIMATION OR VIDEO, IF AVAILABLE, ELSE

(1730)

▼ (1722)

IF HELP REQUEST IS "TELL ME MORE" HELP TYPE, PRESENT
A MORE DETAILED VERSION OF MATERIAL AND/OR LINKS TO
RELATED MATERIAL, IF AVAILABLE, ELSE

(1740)

▼ (1732)

IF HELP REQUEST IS "TELL ME AGAIN" HELP TYPE, PRESENT
A DIFFERENT ARTICULATION AND/OR AN ANALOGY, IF AVAILABLE,
ELSE

(1750)

▼ (1742)

IF HELP REQUEST IS "GIVE ME AN EXAMPLE" HELP TYPE,
PRESENT AN EXAMPLE, IF AVAILABLE, ELSE

(1760)

▼ (1752)

IF HELP REQUEST IS "WHAT IS IT GOOD FOR" HELP TYPE,
PRESENT A DESCRIPTION OF WHAT THE MATERIAL IN THIS UNIT
IS USEFUL FOR, IF AVAILABLE, ELSE

(1770)

▼ (1762)

IF HELP REQUEST IS "HOW IS IT USED?" HELP TYPE, PRESENT
A DESCRIPTION OF HOW THE MATERIAL IN THIS UNIT IS USED,
IF AVAILABLE, ELSE

(1780)

▼ (1772)

IF ANY OF THE REQUESTED MATERIAL IS NOT AVAILABLE,
OFFER TO CONNECT TO (CHAT), OR LEAVE MESSAGE FOR (EMAIL,
NEWS) HUMAN TEACHER AND/OR PEER, VIA ELECTRONIC MEANS

FIGURE 17: EXAMPLE OF EXPANSION OF PART OF ELEMENT (1170)